

# Directed Stockpile Work

## Funding Schedule by Activity

(dollars in thousands)

	FY 2003	FY 2004 <sup>a</sup>	FY 2005	\$ Change	% Change
Directed Stockpile Work					
B61 Life Extension Program.....	71,927	86,113	117,927	+ 31,814	+ 36.9%
W76 Life Extension Program.....	100,237	146,363	213,111	+ 66,748	+ 45.6%
W80 Life Extension Program.....	116,774	144,702	146,400	+ 1,698	+ 1.2%
W87 Life Extension Program.....	116,665	66,305	0	- 66,305	- 100.0%
B61 Stockpile Systems.....	129,294	84,624	91,256	+ 6,632	+ 7.8%
W62 Stockpile Systems.....	24,139	18,062	18,401	+ 339	+ 1.9%
W76 Stockpile Systems.....	92,250	138,019	137,527	- 492	- 0.4%
W78 Stockpile Systems.....	71,209	53,110	44,313	- 8,797	- 16.6%
W80 Stockpile Systems.....	50,236	43,474	49,507	+ 6,033	+ 13.9%
B83 Stockpile Systems.....	59,943	57,703	44,995	- 12,708	- 22.0%
W84 Stockpile Systems.....	7,513	4,145	6,119	+ 1,974	+ 47.6%
W87 Stockpile Systems.....	76,392	88,902	94,884	+ 5,982	+ 6.7%
W88 Stockpile Systems.....	49,541	55,734	49,093	- 6,641	- 11.9%
Retired Warheads Stockpile Systems.....	40,518	58,640	65,258	+ 6,618	+ 11.3%
Stockpile Services Research & Development Certification and Safety.....	139,810	156,196	157,986	+ 1,790	+ 1.1%
Stockpile Services Management, Technology, and Production.....	98,111	111,129	133,101	+ 21,972	+ 19.8%
Stockpile Services Advanced Concepts.....	0	6,000	9,000	+ 3,000	+ 50.0%
Stockpile Services Robust Nuclear Earth Penetrator.....	14,577	7,435	27,557	+ 20,122	+ 270.6%
<b>Total, Directed Stockpile Work.....</b>	<b>1,259,136</b>	<b>1,326,656</b>	<b>1,406,435</b>	<b>+ 79,779</b>	<b>+ 6.0%</b>

<sup>a</sup> FY 2004 reflects a comparability adjustment of \$5,795,000 moving MIE-Computer Numerical Controller Lathe and Glovebox to Readiness Campaign.

## FYNSP Schedule

(dollars in thousands)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FYNSP Total
B61 Life Extension Program .....	117,927	139,765	137,998	118,607	60,888	575,185
W76 Life Extension Program .....	213,111	204,435	200,794	199,499	254,271	1,072,110
W80 Life Extension Program .....	146,400	172,878	187,058	186,009	178,352	870,697
W87 Life Extension Program .....	0	0	0	0	0	0
B61 Stockpile Systems .....	91,256	103,369	118,651	156,783	156,029	626,088
W62 Stockpile Systems .....	18,401	14,808	11,747	9,929	7,692	62,577
W76 Stockpile Systems .....	137,527	135,222	119,916	140,475	141,443	674,583
W78 Stockpile Systems .....	44,313	65,067	90,975	100,906	94,575	395,836
W80 Stockpile Systems .....	49,507	55,049	63,139	63,301	68,338	299,334
B83 Stockpile Systems .....	44,995	51,176	61,671	69,882	61,108	288,832
W84 Stockpile Systems .....	6,119	4,308	2,031	5,099	3,723	21,280
W87 Stockpile Systems .....	94,884	78,338	64,277	54,997	52,659	345,155
W88 Stockpile Systems .....	49,093	53,797	57,679	122,631	125,710	408,910
Retired Warheads Stockpile Systems .....	65,258	23,809	13,860	15,705	16,811	135,443
Stockpile Services Research & Development Certification and Safety .....	157,986	204,828	255,244	270,276	280,199	1,168,533
Stockpile Services Management, Technology, and	133,101	104,946	102,859	121,275	192,712	654,893

**Weapons Activities/  
Directed Stockpile Work**

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	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FYNSP Total
Production .....						
Stockpile Services Advanced Concepts .....	9,000	14,425	14,874	14,595	29,472	82,366
Stockpile Services Robust Nuclear Earth Penetrator Research and Development .....	27,557	94,955	145,371	128,431	88,416	484,730
Total, Directed Stockpile Work .....	1,406,435	1,521,175	1,648,144	1,778,400	1,812,398	8,166,552

## Description

The goal of Directed Stockpile Work (DSW) is to ensure that the nuclear warheads and bombs in the U.S. nuclear weapons stockpile are safe, secure, and reliable. This goal is achieved by: (1) developing solutions to extend weapon life, correcting potential technical issues; (2) conducting scheduled warhead/bomb maintenance; (3) dismantling warheads/bombs retired from the stockpile; (4) conducting evaluations to certify warhead/bomb reliability and to detect/predict potential weapon fixes, mainly from aging; (5) producing and refurbishing warheads/bombs to install the life extension solutions and other fixes; and (6) researching advanced concepts. The DSW effort is fully coordinated with the Department of Defense (DoD).

### **Benefits to Program Goal 01.27.00.00 Directed Stockpile Work**

Within the Directed Stockpile Stewardship program, several subprograms each make unique contributions to Program Goal 01.27.00.00. Four subprograms are working to extend the life of 4 nuclear warheads (B61, W76, W80 and W87). Nine other subprograms are working to ensure the warheads in the enduring stockpile are safe and reliable. These subprograms activities include ongoing assessment and certification activities, Limited Life Component Exchange activities, surveillance activities, and required alterations, modifications, repairs, safety studies, and military liaison work for the B61, W62, W76, W78, W80, B83, W84, W87, and W88. The remaining five subprograms contribute to the goal by retiring and dismantling/disposing of warheads; conducting research and development, certification, and safety efforts; performing quality, engineering and plant management; technology, and production services; investigating advanced concepts; and researching the Robust Nuclear Earth Penetrator.

## Background Information

**Phase 6.X Process.** This defines a common set of phases and procedures to be used for all activities supporting joint DoD-DOE nuclear weapons development, sustainment, and retirement projects, as

agreed by the DoD, DOE, and the Nuclear Weapons Council. Procedures include appropriate levels of review and decision authority, consistent with approved guidelines

**Phase 6.1 Concept Assessment:** Continuing studies and continuous exchange of information, both formal and informal, resulting in the focusing of sufficient interest in an idea for a new or modified weapon or component, or sustainment concept.

**Phase 6.2 Feasibility Study and Option Down Select:** Determination of the feasibility and desirability to undertake a new weapon or sustainment project, establishment of military characteristics, and determination of respective responsibilities between the DOE and the DoD for the various tasks involved in program execution.

**Phase 6.2A Design Definition and Cost Studies:** The DOE identifies information on costs, production schedules, options, and tradeoffs, including those involving safety, security, survivability, and control features for the weapon, and the DoD develops the necessary plans, such as flight testing, trainer, and handling gear procurement, and procurement of new DoD components.

**Phase 6.3 Development Engineering:** Begins with the launching of DOE’s development or sustainment program, through the determination of specifications, and culminates in the design release by the design laboratories.

**Phase 6.4 Production Engineering:** Activities adapting the design into a manufacturing system that can produce weapons and components on a production basis, culminating in the DOE release of the design for production or engineering releases for sustainment.

**Phase 6.5 First Production:** Production of the first new or sustained weapons, their evaluation by the DOE and the DoD, and the DoD’s formal acceptance action or approval for full-scale production or modification.

**Phase 6.6 Full-Scale Production:** The DOE undertakes the full-scale production of new or sustained weapons for the stockpile.

**Phase 7 Retirement:** Begins with the first physical removal of the weapon from the stockpile.

**Weapons Systems Cost Data**

The Weapons Activities portion of the budget will be supplemented with a classified annex which will contain the Selected Acquisition Reports (SARs) for the four life extension programs (LEPs) consistent in format with those submitted by the DoD.

The following table shows in a notional sense the crosswalk from prior year functional reporting to weapons systems reporting.

**FY 2005 Cross walk from DSW Functional Reporting to DSW by Warhead Type**

	Stockpile R&D	Stockpile Maintenance	Stockpile Evaluation	Dismantlement	Field, Eng., Training & Manuals	Production Support
B61 Life Extension Program .....	XXX	XXX	XXX			XXX
W76 Life Extension Program .....	XXX	XXX	XXX			XXX
W80 Life Extension Program .....	XXX	XXX	XXX			XXX
W87 Life Extension Program .....		XXX	XXX			XXX

**FY 2005 Cross walk from DSW Functional Reporting to DSW by Warhead Type**

	Stockpile R&D	Stockpile Maintenance	Stockpile Evaluation	Dismantlement	Field, Eng., Training & Manuals	Production Support
B61 Stockpile Systems .....	XXX	XXX	XXX	XXX	XXX	XXX
W62 Stockpile Systems .....	XXX	XXX	XXX	XXX	XXX	XXX
W76 Stockpile Systems .....	XXX	XXX	XXX	XXX	XXX	XXX
W78 Stockpile Systems .....	XXX	XXX	XXX	XXX	XXX	XXX
W80 Stockpile Systems .....	XXX	XXX	XXX	XXX	XXX	XXX
B83 Stockpile Systems .....	XXX	XXX	XXX		XXX	XXX
W84 Stockpile Systems .....	XXX	XXX	XXX		XXX	XXX
W87 Stockpile Systems .....	XXX	XXX	XXX		XXX	XXX
W88 Stockpile Systems .....	XXX	XXX	XXX		XXX	XXX
Retired Warheads Stockpile Systems .....			XXX	XXX		XXX
Stockpile Services Research & Development Certification and Safety .....						XXX
Stockpile Services Management, Technology, and Production .....		XXX	XXX		XXX	XXX
Stockpile Services Advanced Concepts .....						XXX
Stockpile services Robust Nuclear Earth Penetrator .....						XXX

**Planning and Scheduling.** The DSW Program and Implementation Plans contain cost, scope, and schedule for work accomplishment. More detailed classified schedules are contained in the site Research & Development (R&D) and production documents. Stockpile maintenance, refurbishment, and life extension efforts are currently delineated in the Production & Planning Directive (P&PD) and the Stockpile Life Extension and Refurbishment Planning Component Description Document. These requirements are further promulgated to the nuclear weapons complex through individual weapons system Program Control Documents (PCDs) and the Master Nuclear Schedule (MNS). Refurbishment activities in FY 2005 will focus on accomplishing alterations (Alts), modifications (Mods), and

refurbishment/replacement of bomb/warhead components to extend the life of the stockpile under approved programs. Critical to the stockpile maintenance program is the ability of the nuclear weapons complex to meet new delivery schedules and to assure through continuous monitoring, that any new impacts to the progress of this effort is mitigated or prevented.

## Annual Performance Results and Targets

FY 2000 Results	FY 2001 Results	FY 2002 Results	FY 2003 Results
<p>Report annually to the President on the need or lack of need to resume underground testing to certify the safety and reliability of the nuclear weapons stockpile. (MET GOAL)</p>	<p>Report annually to the President on the need or lack of need to resume underground testing to certify the safety and reliability of the nuclear weapon stockpile. (MET GOAL)</p>	<p>Report annually to the President on the need or lack of need to resume underground testing to certify the safety and reliability of the nuclear weapon stockpile. (MET GOAL)</p>	<p>Report annually to the President on the need or lack of need to resume underground testing to certify the safety and reliability of the nuclear weapon stockpile. (MET GOAL)</p>
<p>Meet all annual weapons alteration and modification schedules developed jointly by DOE and DoD. (BELOW EXPECTATION: Six of the 11 modifications were behind schedule. Revised schedules have been negotiated with DoD that will meet their operational needs.)</p>	<p>Meet all annual weapons maintenance and refurbishment schedules developed jointly by the DOE and DoD. (MET GOAL)</p>	<p>Meet all annual weapons maintenance, refurbishment, and dismantlement schedules developed jointly by the DOE and DoD. (MET GOAL)</p>	<p>Meet all annual weapons maintenance, refurbishment, and dismantlement schedules developed jointly by the DOE and DoD. (MIXED RESULTS)</p>
<p>Adhere to approved schedules for the safe and secure dismantlement of nuclear warheads that have been removed from the U.S. nuclear weapon stockpile. (MET GOAL)</p>	<p>Meet annual schedules for the safe and secure dismantlement of nuclear warheads that have been removed from the U.S. nuclear weapon stockpile. (MET GOAL)</p>		

## Annual Performance Results and Targets

Performance Indicators	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Endpoint Target Date
Percent complete of required assessments & reports to support stockpile certification to the President	Completed 100% of required Annual Stockpile Certification and Surety assessments & reports.	Complete 100% of required Annual Stockpile Certification and Surety assessments & reports.	Complete 100% of required Annual Stockpile Certification and Surety assessments & reports.	Complete 100% of required Annual Stockpile Certification and Surety assessments & reports.	Complete 100% of required Annual Stockpile Certification and Surety assessments & reports.	Complete 100% of required Annual Stockpile Certification and Surety assessments & reports.	Complete 100% of required Annual Stockpile Certification and Surety assessments & reports.	Ongoing
Annual percentage of completed maintenance supporting Enduring Stockpile Maintenance in accordance with the Production Control Document (PCD) schedules (EFFICIENCY MEASURE)	Accomplished 92.7% of all PCD-scheduled activity. Finished 79.2% of all prior year non-completed scheduled evaluations.	Accomplish 95 % of all PCD-scheduled activity. Finish 100 % of all prior year non-completed scheduled evaluations.	Accomplish 95 % of all PCD-scheduled activity. Finish 100 % of all prior year non-completed scheduled evaluations.	Accomplish 95 % of all PCD-scheduled activity. Finish 100 % of all prior year non-completed scheduled evaluations. Initiate new material evaluations of the Alteration 357 B61-7/11 LEP.	Accomplish 95 % of all PCD-scheduled activity. Finish 100 % of all prior year non-completed scheduled evaluations. Initiate final cycle of W62 evaluation prior to retirement.	Accomplish 95 % of all PCD-scheduled activity. Finish 100 % of all prior year non-completed scheduled evaluations. Initiate new W76-1 LEP material evaluation.	Accomplish 95 % of all PCD-scheduled activity. Finish 100 % of all prior year non-completed scheduled evaluations. Initiate a retirement surveillance program for the W62. Initiate new W80-3 LEP material evaluation.	Ongoing
Cumulative percentage of progress in completing Phases* of Nuclear Weapons Council (NWC)-approved B61-7/11 Life Extension Program (LEP)	Completed 100% of B61-7/11 Phase 6.3 activity.	Receive B61-7/11 Phase 6.4 authorization. Complete initial 30% of scheduled B61-7/11 Phase 6.4 activity.	Complete 100% of scheduled B61-7/11 Phase 6.4 activity.	-Complete 100% of scheduled B61-7/11 Phase 6.5 activity. Deliver First Production Unit (FPU). Receive B61-7/11 Phase 6.6 Authorization. Complete 8% of scheduled B61-7/11 Phase 6.6 activity.	Complete 38% of scheduled B61-7/11 Phase 6.6 activity.	Complete 69% of scheduled B61-7/11 Phase 6.6 activity.	Complete 100% of scheduled B61-7/11 Phase 6.6 activity.	Complete B61-7/11 refurbishment FY 2009

Performance Indicators	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Endpoint Target Date
Cumulative percentage of progress in completing Phases* of NWC-approved W76-1 LEP	Completed initial 50% of W76-1 Phase 6.3 activity.	Complete 75% of scheduled W76-1 Phase 6.3 activity.  Complete initial 10% of W76-1 Phase 6.4 activity.	Complete 95% of scheduled W76-1 Phase 6.3 activity.  Obtain W76-1 Phase 6.4 authorization.  Complete 25% of W76-1 Phase 6.4 activity.	Complete 100% of scheduled W76-1 Phase 6.3 activity.  Complete 65% of W76-1 Phase 6.4 activity.	Complete 100% of scheduled W76-1 Phase 6.4 activity.  Deliver FPU.  Obtain W76-1 Phase 6.6 authorization.	Complete 4% of scheduled W76-1 Phase 6.6 activity.	Complete 11% of scheduled W76-1 Phase 6.6 activity.	Complete W76-1 refurbishment FY 2013
Cumulative percentage of progress in completing Phases* of NWC-approved W80-3 LEP	Completed 55% of scheduled W80-3 Phase 6.3 activity.  Rebaselined the W80-3 LEP.	Complete 70% of scheduled W80-3 Phase 6.3 activity.  Complete initial 10% of scheduled W80 Phase 6.4 activity.	Obtain W80 Phase 6.3 authorization.  Complete 100% of scheduled W80-3 Phase 6.3 activity.  Complete 35% of scheduled W80-3 Phase 6.4 activity.	Complete 60% of W80-3 Phase 6.4 activity.	Complete 85% of scheduled W80-3 Phase 6.4 activity.	Deliver FPU.  Complete 100% of scheduled W80-3 Phase 6.4 activity.  Obtain W80 Phase 6.5 authorization.	Obtain W80 Phase 6.6 authorization.  Complete 15% of scheduled W80-3 Phase 6.6 activity.	Complete W80-3 refurbishment FY 2015
Cumulative percentage of progress in completing Phases* of NWC-approved W87-1 LEP	Completed work activity in accordance with Directive Schedule.	Complete scheduled Alteration 342 to W87.						LEP pending decision and direction
Cumulative percentage progress in completing Phase 6.2/6.2A* activities of the Robust Nuclear Earth Penetrator (RNEP)	N/A	Complete 17% of scheduled RNEP Phase 6.2/6.2A activity.	Complete 56% of scheduled RNEP Phase 6.2/6.2A activity.	Complete 100% of scheduled RNEP Phase 6.2/6.2A activity.	Report results of RNEP Phase 6.2/6.2A to Nuclear Weapons Council.  Obtain, if applicable, RNEP Phase 6.3 appropriate authorization.  Complete initial 25% of scheduled RNEP Phase 6.3 activity (if	Complete 65% of scheduled RNEP Phase 6.3 activity (if appropriately authorized).	Complete 100% of scheduled RNEP Phase 6.3 activity (if authorized).  Complete 15% of scheduled RNEP Phase 6.4 activity (if appropriately authorized).	Ongoing (if appropriately authorized)

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6.3 activity (if  
authorized).

\*The DoD-DOE Phase 6.X Process for weapon refurbishment includes Phase 6.1, Concept Assessment; 6.2, Feasibility Study and Option Down Select; 6.2A, Design Definition and Cost Studies; 6.3, Development Engineering; 6.4, Production Engineering, 6.5, First Production; and 6.6, Full-Scale Production.

## Detailed Justification

(dollars in thousands)

	FY 2003	FY 2004	FY 2005
<b>B61 Life Extension Program</b> .....	<b>71,927</b>	<b>86,113</b>	<b>117,927</b>

The B61 Life Extension Program includes refurbishment of the canned subassembly (CSA); and replacement of associated seals, foam supports, cables and connectors, the group X kit, and limited life components on the B61 Mods 7 and 11. The complex will produce two lots of process prove-in hardware and will start production of war reserve quality parts in FY 2005. Process prove-in hardware production demonstrates that plants have adequate processes in place to produce war reserve parts. This production schedule will support the FY 2006 First Production Unit (FPU).

<b>W76 Life Extension Program</b> .....	<b>100,237</b>	<b>146,363</b>	<b>213,111</b>
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The W76 Life Extension Program will extend the life of the W76 for an additional 30 years with the FPU in FY 2007. R&D activities will include qualification and certification activities ensuring refurbished warheads meet all required military characteristics and Stockpile Management efforts will include work on the nuclear explosive package; the Arming, Fuzing, and Firing system; gas transfer system; and associated cables, elastomers, valves, pads, foam supports, tapered tapes, telemetries, and miscellaneous parts. In FY 2005, R&D efforts will complete engineering design of the nuclear explosive package primary subsystem components; conduct the final design and independent peer reviews; and design-flight test bodies for the follow-on commander-in-chief evaluation test (FCET-34). Stockpile Management efforts will ramp up activities in qualification system engineering; procure commercial off-the-shelf parts and associated production materials; design and fabricate tools and gauges; and, conduct process prove-in of production activities for major components including flight tests bodies.

<b>W80 Life Extension Program</b> .....	<b>116,774</b>	<b>144,702</b>	<b>146,400</b>
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The W80 Life Extension Program extends the life of the W80 for an additional 20 years with the FPU in FY 2008. With the combination of W80 program rebaselining and the congressional direction included in the FY 2004 Energy and Water Development Appropriation Act, the W80 FPU has been adjusted to FY 2008, consistent with the Department of Defense schedules. R&D activities will include qualification & certification activities to ensure refurbished warheads meet all required military characteristics and Stockpile Management efforts will focus on replacing the neutron generator, trajectory sensing signal generator, gas transfer system, and other associated components. In FY 2005, R&D efforts will include high energy density experiments, full system engineering tests, system thermo-mechanical tests, captive carry flight tests, development of a joint test assembly (JTA-5) flight test unit; and, support for chemistry and material science. In FY 2005, Stockpile Management will prepare for component design and production; and, ramp up to full production focusing on process prove-in activities beginning with the warhead electrical system subassembly and cover, gas transfer system, cables, warhead interface module, environmental controls, and outer aluminum case.

(dollars in thousands)

	FY 2003	FY 2004	FY 2005
<b>W87 Life Extension Program</b> .....	<b>116,665</b>	<b>66,305</b>	<b>0</b>

The W87 life extension program will be winding down activities in late FY 2004. As a result of Peacekeeper deactivation, discussions are ongoing within the joint DOE/DOD Strategic Capabilities Assessment to determine the final number of W87 required to support deployment on the Minuteman III.

<b>B61 Stockpile Systems</b> .....	<b>129,294</b>	<b>84,624</b>	<b>91,256</b>
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Enduring stockpile workload efforts on all modifications of the B61 will include ongoing assessment and certification activities; cyclical limited life component exchange activities; surveillance activities; and any required alterations, modifications, repairs, safety studies, and military liaison work. In FY 2005, activities include supporting the annual assessment process; conducting laboratory and production plant safety studies and implementation of Seamless Safety for the 21<sup>st</sup> Century; providing laboratory and management support to the Project Officer's Group and DoD Safety Studies; and support of resolution of Significant Finding Investigations. R&D efforts include the following: submit data for surveillance cycle reports; conduct integrated experiments per current approved baseline plan; conduct development, design, and peer reviews on the spin rocket motor; and, support stockpile flight tests of the spin rocket motor. In FY 2005, Stockpile Management will include producing the 1M and 2M reservoirs; conducting pre-production engineering activities for the Alt 356/358/359 spin rocket motor; continuing surveillance tests for the B61-3/4/10 and the B61-7/11 (approximately 11 per family per year at present sampling quantities); disassembling and inspecting the stockpile laboratory tests units; and conducting component laboratory tests and stockpile flight tests for stockpile evaluation.

<b>W62 Stockpile Systems</b> .....	<b>24,139</b>	<b>18,062</b>	<b>18,401</b>
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Enduring stockpile workload efforts on the W62 will include ongoing assessment and certification activities, limited life component exchange activities, surveillance activities, and required alterations, modifications, repairs, safety studies, and military liaison work. In FY 2005, activities include supporting the annual assessment process; conducting laboratory and production plant safety studies; providing laboratory and management support to the Project Officer's Group and DoD Safety Studies; and support of resolution of Significant Finding Investigations. R&D efforts will focus on conducting material, component, and system level testing, analysis, and evaluation of performance and safety. Stockpile Management activities include continuing a normal cycle of surveillance tests plus additional targeted surveillance of aging components; and, conducting stockpile laboratory and flight tests, and disassembly and inspection of test units and test beds. Surveillance must be maintained through FY 2007 in preparation for the retirement of the W62 in FY 2009.

<b>W76 Stockpile Systems</b> .....	<b>92,250</b>	<b>138,019</b>	<b>137,527</b>
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Enduring stockpile workload efforts on the W76 will include ongoing assessment and certification activities, limited life component exchange activities, surveillance activities, and required alterations, modifications, repairs, safety studies, and military liaison work. In FY 2005, specific activities include: supporting the annual assessment process; conducting laboratory and production plant safety studies in implementation of Seamless Safety for the 21<sup>st</sup> Century for rebuild activities at Pantex; providing laboratory and management support to the Project Officer's Group and DoD Safety Studies; and support of resolution of Significant Finding Investigations. R&D activities include submitting data for surveillance cycle reports and conducting integrated experiments per current approved baseline plan; Stockpile Management activities include steady state production of the 1X Acorn; production of

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(dollars in thousands)

FY 2003	FY 2004	FY 2005
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Stockpile Management activities include steady state production of the 1X Acorn; production of telemetry units and neutron generator monitors; production of unique structural parts and Acorns for joint test assemblies; building three joint test assemblies; conducting stockpile laboratory and flight tests; and, disassembling and inspecting test units.

**W78 Stockpile Systems ..... 71,209 53,110 44,313**

Enduring stockpile workload efforts on the W78 will include ongoing assessment and certification activities, limited life component exchange activities, surveillance activities, and required alterations, modifications, repairs, safety studies, and military liaison work. In FY 2005, activities include supporting the annual assessment process; conducting laboratory and production plant safety studies in implementation of Seamless Safety for the 21st Century; providing laboratory and management support to the POG and DoD Safety Studies; and, support of resolution of Significant Finding Investigations. R&D activities include submitting data for surveillance cycle reports and conducting integrated experiments per current approved baseline plan. Stockpile Management activities include initiating production activities for the firing system; continuing to work on the improved LF-7 gas transfer system; conducting 3 stockpile flight tests using the redesigned W78 joint test assemblies; and, disassembly and inspection of stockpile laboratory and flight units and test beds.

**W80 Stockpile Systems ..... 50,236 43,474 49,507**

Enduring stockpile workload efforts on the all modifications of the W80 include ongoing assessment and certification activities, limited life component exchange activities, surveillance activities, and required alterations, modifications, repairs, safety studies, and military liaison work. In FY 2005, specific activities include supporting the annual assessment process; conducting laboratory and production plant safety studies in implementation of Seamless Safety for the 21st Century; providing laboratory and management support to the Project Officer's Group and DoD Safety Studies; and support of resolution of Significant Finding Investigations. R&D activities include submitting data for surveillance cycle reports; and, conducting integrated experiments per current approved baseline plan. Stockpile Management activities include the stable production of the 1K reservoir; producing telemetry units, neutron generator monitors, cables, and other joint test assembly hardware for support of stockpile flight tests; continuing polymeric evaluation testing; building six joint test assemblies; and, conducting the disassembly and inspection of six stockpile laboratory and flight tests each and six test beds.

**B83 Stockpile Systems ..... 59,943 57,703 44,995**

Enduring stockpile workload efforts on all modifications of the B83 include ongoing assessment and certification activities; limited life component exchange activities; surveillance activities; and required alterations, modifications, repairs, safety studies, and military liaison work. In FY 2005, specific activities include supporting the annual assessment process; conducting laboratory and production plant safety studies in implementation of Seamless Safety for the 21st Century; providing laboratory and management support to the Project Officer's Group and DoD Safety Studies; and, support of resolution of Significant Finding Investigations. R&D efforts will focus on conducting material, component, and system level testing and evaluating performance and safety characteristics. Stockpile Management efforts include surveillance of B83 detonators and pits in support of the annual certification effort;

(dollars in thousands)

FY 2003	FY 2004	FY 2005
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accomplishing 11 stockpile laboratory and flight tests; completing the disassembly and inspection of stockpile laboratory and flight test units; and, rebuilding B83-1 Retrofit Evaluation System Test (REST) unit.

**W84 Stockpile Systems ..... 7,513 4,145 6,119**

Enduring stockpile workload efforts on all modifications of the W84 include ongoing assessment and certification activities. In FY 2005, specific activities include: supporting the annual assessment process; conducting laboratory and production plant safety studies in implementation of Seamless Safety for the 21st Century; providing laboratory and management support to the Project Officer's Group and support of Significant Finding Investigation resolution. R&D efforts include conducting material, component and system level testing and, evaluating performance and safety characteristics. Stockpile Management efforts include support of the disassembly and inspection of some existing Joint Test Assembly (JTA) units. Although there is no delivery system for the W84, the DoD requires NNSA to maintain the W84 warhead readiness.

**W87 Stockpile Systems ..... 76,392 88,902 94,884**

Enduring stockpile workload efforts on the W87 include ongoing assessment and certification activities, limited life component exchange activities; surveillance activities; and required alterations, modifications, repairs, safety studies, and military liaison work. In FY 2005, specific activities include: supporting the annual assessment process; conducting laboratory and production plant safety studies; providing laboratory and management support to the Project Officer's Group and DoD Safety Studies; and, support of resolution of Significant Finding Investigations. R&D efforts include conducting material, component, and system level testing; evaluating performance and safety characteristics; and, developing a new W87 stockpile flight test vehicle. Stockpile Management efforts include producing environmental sensing devices, firing sets, and lightening arrestor connectors in support of surveillance rebuilds for the protected period; restarting production of other cables, valves, and mechanical piece parts; conducting disassemblies and inspections of eight stockpile laboratory test units, three stockpile flight test units, production of three joint test assemblies, and production of eight test beds; providing range support and data collection of W87 stockpile flight tests; and, continuing surveillance of W87 detonators.

**W88 Stockpile Systems ..... 49,541 55,734 49,093**

Enduring stockpile workload efforts on the W88 include ongoing assessment and certification activities, limited life component exchange activities, surveillance activities, and required alterations, modifications, repairs, safety studies, and military liaison work. In FY 2005, specific activities include: supporting the annual assessment process; conducting laboratory and production plant safety studies in implementation of Seamless Safety for the 21st Century; providing laboratory and management support to the Project Officer's Group and DoD Safety Studies; and, support of resolution of Significant Finding Investigations. R&D efforts include submitting data for surveillance cycle reports and, conducting integrated experiments per current approved baseline plan. Stockpile Management efforts include continuing forging procurements; initiating engineering development activities for the 4T and 1P reservoirs; and, disassembling and inspection of eight stockpile laboratory test units, five stockpile flight test units, production of five joint test assemblies, and several test beds.

(dollars in thousands)

	FY 2003	FY 2004	FY 2005
<b>Retired Warheads Stockpile Systems.....</b>	<b>40,518</b>	<b>58,640</b>	<b>65,258</b>

Retired Warhead system workload focuses on dismantlement, characterization of components, disposal of retired warheads systems, and surveillance of selected components from the retired systems. Stockpile Management includes continuing the surveillance of retired stockpile warheads: conducting facility hazard assessments, including lightning, environmental sensing devices, and fire protection; issuing safety analysis reports; conducting laboratory and production plant safety studies in implementation of Seamless Safety for the 21st Century for newly retired systems; providing oversight for testers; and, supporting the Tri-lab office. Also included are workload activities on the B53, W56, B61-3/4, W68 Arming Fuzing and Firing (AF&F), W79 components, W62, MK4 AF&F, and workload processes unique to the storage and disposition of active weapons that have been dismantled as part of the Surveillance Program or are designated in excess.

<b>Stockpile Services Research &amp; Development Certification and Safety .....</b>	<b>139,810</b>	<b>156,196</b>	<b>157,986</b>
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The Stockpile Services R&D Certification and Safety activities provide the core competencies and capabilities for R&D efforts not directly attributable to a single specific warhead system. Efforts span all systems and include conducting modeling and assessment, safety and surety, warheads effects and system analysis studies, and model-based engineering and manufacturing; preparing and performing hydrodynamic tests for specific stockpile questions; providing engineering and information infrastructure support, production liaison and oversight, multi-system surveillance, material science support, and interagency support; subsystems, and other components for use in multiple systems; and, archiving legacy and current knowledge pertaining to warheads. In FY 2005, R&D efforts include conducting development of gas transfer systems, technology for stockpile multi-use components, instrumentation, and ancillary equipment for future application in the stockpile; performing systems studies, technical safety exchanges, and program, complex, and campaign integration activities; integrating management, engineering business practices, information systems, and R&D program management; developing use control systems and joint test assemblies; and, supporting Pre-Phase 6.3 Studies.

<b>Stockpile Services Management, Technology, and Production.....</b>	<b>98,111</b>	<b>111,129</b>	<b>133,101</b>
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The Stockpile Services Stockpile Management, Technology, and Production category includes certain management and workload activities that cannot be meaningfully associated with a particular system and may ultimately serve multiple systems. Stockpile Management efforts in FY 2005 include maintaining technical knowledge, engineering practices, and information systems; conducting component engineering activities, reservoir forging development, Significant Finding Investigation activities, program management and integration, special stockpile studies, and independent assessments; integrating projects; conducting required training for stockpile systems; performing safety and use control assessments; providing payments resulting from court orders that were based upon manufacture of nuclear warheads components; and, conducting activities that develop, maintain, surveil stockpile multi-use components, instrumentation, ancillary equipment, and certain activities that cannot be associated with specific systems.

(dollars in thousands)

FY 2003	FY 2004	FY 2005
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**Stockpile Services Advanced Concepts Initiative .....**                    **0**                    **6,000**                    **9,000**

The Stockpile Services Advanced Concepts Initiative is used for reporting funding requirements of Pre-Phase 3/6.3 laboratory workload activities to potentially enhance the military capabilities of the stockpile, in coordination with the DoD. These activities include: developing advanced concepts which could be applied to the stockpile of the future, code development for system-specific nuclear effects, phenomenology, and exercise of design skills; conducting pre-conceptual, conceptual, feasibility, design and costing studies of options. Efforts also include participating on program panels; supporting the United States Strategic Command by supplying quick turnaround, limited scope answers to questions concerning feasibility; participating in the NNSA/DoD Nuclear Planning Group-2 study; conducting concept studies with the Air Force.

**Stockpile Services Robust Nuclear Earth Penetrator..**                    **14,577**                    **7,435**                    **27,577**

The Stockpile Services Robust Nuclear Earth Penetrator (RNEP) category includes funding for the completion of the Phase 6.2/2A Air Force-led study. Activities include participating in integrated NNSA-DoD project teams for development of operational requirements; systems design and integration; development of data downselect packages; planning and cost analysis; phenomenology studies; and the executive joint study group. It also includes managing multi-laboratory independent review team activities, and preparing and conducting hardware demonstration tests for candidate designs. In FY 2005, subsystem tests and a full system test of the proposed design will be completed. All NNSA headquarters and laboratory activities for the RNEP study are coordinated with complementary activities by the Air Force's Air Combat Command and Air Armament Center in conjunction with the responsible directorate of the Air Staff (AF/XON).

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**Total, Directed Stockpile Work .....**                    **1,259,136**                    **1,326,656**                    **1,406,435**

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## Explanation of Funding Changes

FY 2005 vs.  
FY 2004  
(\$000)

- **B61 Life Extension Program**

The requested increase supports conducting the final design and peer reviews; ramping up qualification activities; producing surrogate material parts; completing preproduction activities; and, producing two process prove-in hardware lots and war reserve components in preparation for the increased level of activity required to meet the FY 2006 FPU.....

+ 31,814
- **W76 Life Extension Program**

This funding increase supports conducting final development, design, and peer reviews; procuring commercial off-the-shelf parts and associated materials; ramping up the qualification of systems engineering; designing and fabricating tooling and gauges; conducting process prove-in of production activities for major components; completing engineering design of nuclear explosive package primary subsystem components; and, building and delivering FCET-34 JTA to meet a FY 2007 FPU.....

+ 66,748
- **W80 Life Extension Program**

This increase supports a schedule to match Air Force acceptance schedules and supports the continued efforts to complete the final design and conduct peer reviews; issuing engineering releases; initiating process prove-in activities for production of the warheads electrical system subassembly and cover, gas transfer system, cables, warhead interface module, environmental controls, and outer aluminum case; and, producing the first delivery unit of the neutron generator to meet a FY 2008 FPU .....

+ 1,698
- **W87 Life Extension Program**

Funding decrease reflects the delay in the W87 LEP pending decision and directions based on results of the NPR update.....

- 66,305
- **B61 Stockpile Systems**

This increase supports conducting Seamless Safety for the 21st Century activities; conducting development, design, and peer reviews for the spin rocket motor; commencing Alt 356/358/359 spin rocket motor pre-production engineering; and initiating stockpile flight tests. ....

+ 6,632
- **W62 Stockpile Systems**

This increase supports the operation of an additional disassembly and inspection line .....

+ 339

FY 2005 vs. FY 2004 (\$000)
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- **W76 Stockpile Systems**

This funding decrease is based on planned closure of existing significant finding investigations in FY 2004 ..... - 492
- **W78 Stockpile Systems**

This funding decrease reflects a significant reduction in the production of neutron generators (NG) in accordance with the Master Nuclear Schedule volume III. This was achieved by successful age studies that enable the extension of life expiration dates for the neutron generators..... - 8,797
- **W80 Stockpile Systems**

This increase supports conducting Seamless Safety for the 21st Century activities for a full year..... + 6,033
- **B83 Stockpile Systems**

Funding decrease due to completion of component characterization activities; change in production cost estimating; and, completion of Alt 355 and telemetry tester replacement ..... - 12,708
- **W84 Stockpile Systems**

Funding increase supports completion of the Seamless Safety for the 21st Century activities and conduct of joint test assemblies, Disassembly and Inspections (D&Is) and lab tests to validate the system remains safe in all Air Force storage environments ..... + 1,974
- **W87 Stockpile Systems**

The requested increase in funding supports rebuild activities for the environmental sensing device, lightning arrestor cable, firing set, completion of new design joint test assemblies, and completing shelf-life units and surveillance units. .... + 5,982
- **W88 Stockpile Systems**

This decrease reflects savings due to down selecting to one gas transfer system instead of continuing to develop the multiple systems in parallel for the GTS replacement. Also reflected is a funding decrease for completion of Seamless Safety for the 21st Century activities in early FY 2005 and the projected completion of activities to reduce the surveillance backlog in FY 2004. .... - 6,641
- **Retired Warheads Stockpile Systems**

The increase in funding supports dismantlement activities on the following systems: B53, W56, W79 components, W62, and MK4 AF&F, and storage and disposition of active weapons that have been dismantled as part of the Surveillance Program or are designated in excess. .... + 6,618

FY 2005 vs. FY 2004 (\$000)
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<ul style="list-style-type: none"> <li> <b>▪ Stockpile Services Research &amp; Development</b>            This increase reflects support for component testing which is partially offset by reduced stockpile specific experiment activity on the Omega Laser Facility, and reduced scope of work and a schedule delay on ACCORDION Prime subcritical experiments at the Nevada Test Site. ....         </li> </ul>	+ 1,790
<ul style="list-style-type: none"> <li> <b>▪ Stockpile Services Stockpile Management, Technology, and Production</b>            This increase reflects the court ordered payments to legacy workers for toxic material exposure; increasing support for special component removal and container studies and associated implementation efforts; conducting independent assessment of production plant capacities and capabilities necessary for increased production; producing neutron generator test equipment; procuring special materials to support new limited life component builds; realigning program management for increased emphasis on quality aspects and reactivation of production quality control processes; and reactivation of production quality control processes.....         </li> </ul>	+ 21,972
<ul style="list-style-type: none"> <li> <b>▪ Stockpile Services Advanced Concepts Initiative</b>            Funding increase reflects an anticipated increase in programmatic activities. Second full year of funding in this category for all laboratories .....         </li> </ul>	+ 3,000
<ul style="list-style-type: none"> <li> <b>▪ Stockpile Services Robust Nuclear Earth Penetrator Research &amp; Development</b>            This increase in funding reflects the initiation of various developmental ground tests conducted on the candidate weapon designs in support of the Phase 6.2/6.2A option select .....         </li> </ul>	+ 20,122
<b>Total Funding Change, Directed Stockpile Work</b> .....	<hr/> + 79,779 <hr/>

## Capital Operating Expenses and Construction Summary

### Capital Operating Expenses<sup>a</sup>

(dollars in thousands)

	FY 2003	FY 2004	FY 2005	\$ Change	% Change
General Plant Projects.....	8,012	8,252	8,500	+ 248	+ 3.0%
Capital Equipment.....	18,955	19,524	20,110	+ 586	+ 3.0%
<b>Total, Capital Operating Expenses .....</b>	<b>26,967</b>	<b>27,776</b>	<b>28,610</b>	<b>+ 834</b>	<b>+ 3.0%</b>

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<sup>a</sup> Since funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects, we no longer budget separately for capital equipment and general plant projects. FY 2004 and FY 2005 funding shown reflects estimates based on actual FY 2003 obligations.